distance determiner 18 and the object identifier 20. The output signals of the distance determiner 18 and object identifier 20 are provided to display 24 for viewing along with the image from cameras 12, 14, 16. See Col. 2, lines 28 to 48 of Gutta '273.

Claim 15 recites a device for detecting road users and obstacles as a function of camera images to determine their distance from an observer, and to classify them, comprising:

a distance-measuring sensor unit;

a mono-image camera coupled to the distance-measuring sensor unit;

a first classifying unit interposed between the sensor unit and the camera; and

a second classifying unit downstream from the sensor unit and the camera.

In the present claim 15, the second classifying unit is downstream from both the sensor unit and the camera, as shown clearly in Fig. 1 of the present application. The advantages of such a configuration were discussed in detail in the previous office action.

In Gutta '273, object identifier 20 is not downstream of distance determiner 18, but rather is independent from distance determiner 18. In Gutta '273, information from distance determiner 18 is not passed at all to object identifier 20.

It is also respectfully submitted that there also are not two separate classifying units described in Gutta '273.

The interaction of the two separate classifying units as claimed permits rapid and reliable detection of road users and obstacles.

Withdrawal of the rejection to claim 15 is respectfully requested.

35 U.S.C. 103

Claims 1 to 14 and 17 to 19 were rejected under 35 U.S.C. 103, either under Gutta '273 alone, under Gutta '273 in combination with Gutta '272 or under Gutta '273 in combination with Nishio.

Claim 1 recites a method for detecting road users and obstacles as a function of camera images so as to determine their distance from an observer and to classify them, comprising the steps of:

identifying regions within a two-dimensional camera image using a classifier designed for detecting road users and obstacles;

marking and ranging, in a subsequent step, the identified regions using a distance-measuring sensor with respect to their distance from the observer; and

subsequently type classifying the identified regions using a type classifier.

(1) Gutta '273, as admitted, does not disclose type classifying subsequent to a marking and ranging step. In fact, in Gutta '273 the marking and ranging step occurs independently of the type classification, as described in col. 3, lines 22 to 27.

(2) Gutta also does not show or disclose "identifying regions within a two-dimensional camera image using a classifier designed for detecting road users and obstacles: as an entire angle "Theta" of the field of vision 12', 14', 16' is read and no specific regions within this field of vision are identified using a classifier.

There also is no teaching or indication in Gutta of the order of the claimed invention: first identifying regions using a classifier, marking and ranging, in a subsequent step, the identified regions, and subsequently type classifying the identified regions.

The interaction of the steps performed by the classifier and the type classifier as claimed permits rapid and reliable detection of road users and obstacles.

there is no interaction between distance

no factual evidence

It is respectfully submitted that it would not have been obvious to one of skill in the art to provide type classification subsequent to the marking and ranging step in Gutta '273. The present invention permits the marking and ranging to be used for type classification, which Gutta does not teach.

Withdrawal of the rejection of claim 1 and its dependent claims 2 to 14 and 18 is respectfully requested, as neither Gutta '272 nor Nishio shows this feature either.

With further respect to claim 4, claim 4 recites a hyperpermutation network. A hyperpermutation network advantageously permits a pixel-based classification without requiring significant preprocessing, in contrast to non pixel-based classifications such as polynomial classifiers which typically require a segmenting of the image and a size standardization for the associated object vectors. It is respectfully submitted that the use of such a hyperpermutation network in the context of the present invention is not a matter of design choice and is advantageous in the context of the present invention to reduce processing effort.

With further respect to claim 12, claim 12 recites "the method as recited in claim 1 wherein the regions to be subjected to a type classification are selected as a function of at least one of distance and relative velocity in relation to the observer."

Gutta '273 does not show this feature. Type classification is completely independent from distance or velocity in Gutta '273. See Gutta col. 3, line 51 et seq.

With further respect to claim 14, it is not understood what the Office Action is identifying as a risk calculator and it is respectfully submitted that Gutta '273 does not show such a calculator.

With respect to claims 17 and 19, it is respectfully submitted that these claims are patentable in view of the comments with respect to claim 15. With further respect to claim 17, it is not understood what the Office Action is identifying as a risk calculator and it is respectfully submitted that Gutta '273 does not show such a calculator.

CONCLUSION

It is respectfully submitted that the present application is in condition for allowance and applicants respectfully request such action.

Respectfully submitted,

DAVIDSON, DAVIDSON & KAPPEL, LLC

By

William C. Gehris
Reg. No. 38,156

Davidson, Davidson & Kappel, LLC
485 Seventh Avenue, 14th Floor
New York, New York 10018
(212) 736-1940